Antimicrobial resistance of enterococci isolated from outpatient stools in the United States, 1998-2001

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Background: Antimicrobial resistance complicates the treatment of Enterococcus faecalis and *E. faecium* infections in humans; many of these infections are invasive and may be life-threatening. Recent studies have demonstrated frequent isolation of antimicrobial-resistant enterococci from meat and poultry in grocery stores. We, therefore, sought to determine whether persons in the community might carry antimicrobial-resistant enterococci.

Methods: Stool specimens were collected from outpatients with diarrhea in Georgia, Maryland, Minnesota, and Oregon from 1998 to 2001 and cultured on Gram-positive selective media (CNA agar). One enterococcus per specimen was forwarded to CDC for species identification and susceptibility testing with NCCLS interpretive breakpoints using broth microdilution (Sensititre)for vancomycin, penicillin, gentamicin, chloramphenicol, erythromycin, and quinupristin/dalfopristin (*E. faecium* only); selected *E. faecium* isolates were susceptibility tested by E-test for imipenem and ampicillin. Resistance to bacitracin, imipenem, and high-level gentamicin (HLGR) were defined as MIC >4, >8, and >500 g/ml, respectively.

Results: Enterococci were isolated from 1657 (79%) of 2084 stool specimens. Of the 986 speciated isolates, 581 (59%) were *E. faecalis* and 303 (31%) were *E. faecium*. All isolates were resistant to bacitracin. None of the 435 *E. faecalis* isolates tested were resistant to vancomycin, 1 was resistant to penicillin, 15 (3%) were HLGR, 27 (6%) were resistant to chloramphenicol, and 378 (87%) were resistant to erythromycin. Among the 193 *E. faecium* isolates tested, 14 (7%) were resistant to penicillin, 7 (4%) were HLGR, 5 (3%) were resistant to quinupristin/dalfopristin, and 2 (1%) were resistant to vancomycin. Of a subset of 58 *E. faecium* isolates tested, 12 (21%) were resistant to imipenem; none were resistant to ampicillin.

Conclusion: Antimicrobial resistant enterococci were found in human stools collected from outpatients with diarrhea, demonstrating a community reservoir for such resistance. Further studies are needed to examine the source and clinical significance of this resistance.

Suggested citation:

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